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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,060	01/31/2002	Steven Teig	SPLX.P0072	3948

23349 7590 11/04/2004

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EXAMINER

KIK, PHALLAKA

ART UNIT PAPER NUMBER

2825

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/066,060	TEIG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Phallaka Kik	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/31/02, 5/27/03, 8/27/04, 8/24/04, 5/18/04, 4/16/04.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/16/04, 5/18/04, 8/24/04, 8/27/04.</u>                                   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This Office Action responds to the Application filed on 1/31/2002, preliminary amendment filed on 5/27/2003, IDS filed on 4/16/2004, 5/18/2004, 8/24/2004, 8/27/2004. Claims 1-22 are pending.

#### *Claim Objections*

2. **Claims 6-13,19-22** are objected to because of the following informalities:

As per **claims 6,19**, "the quality" (lines 2-3 and 4 respectively) should be --quality-- for proper antecedent basis.

As per **claims 8-9,21-22**, "the length" (lines 1 and 2 respectively) should be --a length-- for proper antecedent basis.

As per **claim 13**, "can be" (line 2) should be --is-- to clearly identify what is being claimed.

As per **claims 7-12,20-22**, the claims are also objected to for incorporating the above errors into the respective claims by claim dependency.

Appropriate correction is required.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application

filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-22** are rejected under 35 U.S.C. 102(e) as being anticipated by **Pileggi et al.** (US Patent Application Publication No. 2001/0047507).

As per **claims 1,14**, all of the elements of the claims are illustrated in Fig. 1, wherein the different routing solutions identified are performed in steps 1-5b, and wherein the selected best routing solution is performed at step 5d (see also pages 1-3, especially paragraphs [0017], [0019], [0022]-[0025]), wherein since the method/system is a computer-implemented method/system (see paragraphs [0001]-[0005]), the computer program, computer readable medium and instructions are inherently included as being necessary to implement the computer-implemented method/system.

As per **claims 2-5,15-18**, routing solutions for each net, some nets and all nets in the group or cluster of nets are also part of the iterative routing/placement as described on page 2, wherein initially all nets are equally treated equally (thus all routing solutions are considered or identified) (paragraph [0017]), and some of the nets are considered or selected in the iterative process (see paragraphs [0021]-[0025]).

As per **claims 6-9,19-22**, the metric cost including taking into accounts the length of the route, is also described as part of the smear and cost function as described in paragraphs [0017],[0021]-[0025].

As per **claims 10-13**, the routing solution being selected based on better cost metric, better than the metric-cost threshold (i.e., minimum delay, predetermined costs

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or thresholds), optimal metric cost or examined a particular maximum number of routes (i.e., critical paths) are also described in paragraphs [0021], [0022], [0026], [0027].

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Therefore, Applicant is herein requested to consider them carefully in response to this Office Action. In particular, the following prior arts are most relevant:

US Patent Application Publication Nos.:

20030005398, 20020104061, 20010003843;

US Patent Nos.:

6738960, 6510544, 6493863, 6493658, 6480991, 6385760, 6349403, 6330707, 6122443, 6154873, 5757089, RE35671, 5673201, 5363313, 4615011,

IBM TDB document No.: NN8407978.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phallaka Kik whose telephone number is 571-272-1895. The examiner can normally be reached on Flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PK 

October 22, 2004



MATTHEW SMITH  
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